REMARKS

Summary of the Invention

Claims 1-5, 7-9, 11-16 and 19-30 are all the claims pending in the application.

Claims 1-5, 7-9, 11-16, 19, 21-24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over van der Tuijn et al. (U.S. Patent No. 6,683,886) in view of Omi et al. (U.S. Patent No. 6,940,831).

Claims 20 and 25-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Analysis of the Claim Rejections

The Examiner rejects claims 1-5, 7-9, 11-16, 19, 21-24 and 30 under 35 U.S.C. § 103(a), citing a new reference, van der Tuijn et al., instead of Vook et al. in the previous Office Actions. Applicants respectfully disagree with the Examiner's analysis and traverse the rejections.

Firstly, Applicants discuss the technical differences between newly cited van der Tuijn et al. and the claimed invention.

Van der Tuijn et al. discloses "prioritizing the communication links" (col. 3, lines 6-14), but does not disclose that <u>a slave device requests a priority from the master device according to the service type, and the master device assigns a priority to the slave device considering the requested priority</u>, as in an exemplary embodiment consistent with the claimed invention.

Van der Tuijn et al. also discloses "processing circuitry 18 analyzes the data transfer rates of individual communication links 14 using information from the link control block 28. Thereafter, processing circuitry 18 prioritizes communication links 14 from those having the

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fastest data transfer rates to those having the slowest data transfer rates" (col. 6, lines 65 - col. 7, line 4). However, according to an exemplary embodiment consistent with the claimed invention, the priority requested by the slave device is not assigned to the slave device, but a priority is assigned to the slave device in the process of determining a priority considering the level of the requested priority (refer FIG. 4). For example, when the high priority is requested by the slave device, the master device determines whether the current number of slave devices of high priority in the Piconet is smaller than the high priority maximum number, i.e., the predetermined maximum number of the slave devices that could have high priority in the Piconet. If the current number of the slave devices of high priority is smaller than the high priority maximum number, the master device assigns the high priority to the slave device.

According to an exemplary embodiment consistent with the claimed invention, the slave device and master device perform the process of determining a priority (refer to FIG. 4) using the requested priority regardless of the data transfer rate. Also, if a priority is assigned to the slave device, the frequency of communication is determined according to the assigned priority, whereas, in van der Tuijn et al., the data transfer rates of individual communication links are analyzed, and priorities are sequentially assigned to the communication links in order of data transfer rate, from the fastest to slowest (col. 6, lines 65 - col. 7, line 4).

Based on the above differences, the exemplary embodiment consistent with the claimed invention provides the effect that a priority is assigned to a slave device considering a priority requested by the slave device, and the frequency of communication is determined according to

the assigned priority so that the slave device is not assigned a higher transfer rate than is

necessary.

Next, Applicants discuss the non-obviousness of the rejected claims in more detail.

Currently presented claim 1 recites:

A wireless communication apparatus for performing a wireless
communication, comprising:

a transceiving unit for receiving and transmitting data externally, the
transceiving unit maintaining a link to at least one slave device and <u>receiving
a requested priority</u> from the at least one slave device, when the wireless
communication apparatus is operated as a master;

a controller for determining a priority of the at least one slave device
<u>considering the requested priority</u> and priorities of the other slave devices
that are currently linked, <u>determining a frequency of communication</u>
according to the priority of the at least one slave device and controlling the
communication with the at least one slave device; and

a memory for <u>storing the frequency of communication</u> of the at least
one slave device.

With respect to claim 1, van der Tuijn et al. appears to teach a communication system

which enables packets according to priority as opposed to allocating packets to channel slot

numbers for activation (col. 5, line 66 to col. 6, line 3). Van der Tuijn et al. also teaches that

processing circuitry of a master unit is configured to analyze communication links of the

appropriate piconet and to prioritize an order of communication of the packets using the

communication links responsive to the analysis (col. 5, lines 10-18).

However, van der Tuijn et al. fails to teach or suggest "a transceiving unit for <u>receiving a requested priority</u> from a slave device," "a controller for determining a priority of the slave device <u>considering the requested priority</u> and priorities of the other slave devices that are currently linked, and <u>determining a frequency of communication</u> according to the priority of the slave device," and "a memory for <u>storing the frequency of communication</u> of the slave device."

More specifically, communication devices of van der Tuijn et al. do not determine a priority of the slave device considering the requested priority and priorities of the other slave devices that are currently linked, as recited in claim 1, but instead determine priorities according to their own analyses based on data transfer characteristics, such as data transfer rates, time-out, maximum data relay, etc. (col. 5, lines 10-18 and col. 7, lines 36-47). In addition, van der Tuijn et al. only teaches a memory storing a set of instructions for execution by processor (col. 5, lines 19-28), but does not teach a memory for storing the frequency of communication of the slave device, as recited in claim 1.

Furthermore, according to an exemplary embodiment consistent with the claimed invention of claim 1, the memory stores the polling frequency, that is, the frequency of communication of the slave device according to the priority of the slave device (refer to FIG. 5). However, the link control block 28 of van der Tuijn et al. stores information such as communication link (packet) priority, communication link status (enable/disable), communication link data buffer status (full/empty) and so on (col. 5, lines 29-334), as recited by the Examiner.

Omi et al. also does not teach or suggest "a transceiving unit for <u>receiving a requested priority</u> from a slave device," "a controller for determining a priority of the slave device <u>considering the requested priority</u> and priorities of the other slave devices that are currently linked, and <u>determining a frequency of communication</u> according to the priority of the slave device," and "a memory for <u>storing the frequency of communication</u> of the slave device."

More specifically, Omi et al. only teaches the assigning of transmission bands according to a state of data transmission, but does not teach determining a priority of the slave device considering the requested priority and priorities of the other slave devices that are currently linked, as recited in claim 1. Even though Omi et al. teaches that a scheduler of a master station carries out transmission band assignment according to an order in which the communication link has been set or a priority order of the priority parameter included in the communication parameter, there is no suggestion in Omi et al. for determining priority of slave device considering the requested priority because, in Omi et al. the assignment is made directly from the received priority parameter (col. 4, lines 43-48).

Accordingly, Applicants respectfully submit that, since neither van der Tuijn et al. nor Omi et al. teaches or suggests the features described in claim 1, it would not have been obvious for a person of ordinary skill in the art to reach the invention described in claim 1 even by combining van der Tuijn et al. and Omi et al.

Applicants also respectfully submit that claims 2-5, 7, 19, 21-24 and 30 would be also patentable over van der Tuijn et al. in view of Omi et al. at least because of their dependency from independent claim 1.

Currently presented claim 8 recites:

> A wireless communication system having at least one slave device and a master device linked with the at least one slave device,
>
> the at least one slave device <u>transmitting a requested priority</u> to the master device, and
>
> the master device <u>receiving the requested priority</u> from the at least one slave device, and determining and assigning the at least one slave device with a priority <u>considering the requested priority</u> and priorities of the other slave devices that are currently linked,
>
> wherein the at least one slave device transmits the requested priority <u>according to the amount of data to be transmitted</u> to the master device.

As discussed above, both van der Tuijn et al. and Omi et al. fail to teach or suggest "at least one slave device <u>transmitting a requested priority</u> to the master device," and "a master device <u>receiving the requested priority</u> from the at least one slave device, and determining and assigning the at least one slave device with a priority <u>considering the requested priority</u> and priorities of the other slave devices that are currently linked," as recited in claim 8.

According to an exemplary embodiment consistent with the claimed invention of claim 8, the slave device and master device perform the process of determining a priority using the requested priority (refer to FIG. 4), regardless of the data transfer rate. Also, the slave device requests a high priority In the case of transmitting a large amount of data to the master device. However, in van der Tuijn et al., if the data transfer rate is high, a high priority is assigned. Accordingly, a priority is assigned in different manners between the claimed invention of claim 8 and van der Tuijn et al.

On the other hand, the Examiner admits in the Office Action that van der Tuijn et al. does

not teach that at least one slave device transmits the requested priority <u>according to the amount</u>

<u>of data to be transmitted</u> to the master device (page 8 of the Office Action). In this connection,

the Examiner relies on Omi et al. for teaching this technical feature, but Omi et al. also does not

teach that the slave device transmits the requested priority <u>according to the amount of data to be</u>

<u>transmitted</u> to the master device, as recited in claim 8.

More specifically, in Omi et al., a slave station provides a communication parameter with

a priority parameter to the master station (col. 4, lines 47-48), however, this priority parameter

does not have any relationship to an amount of data to be transmitted. In other words, although

Omi et al. discusses calculating a data amount parameter indicating an amount of data to be

transmitted (col. 3, lines 55-56), the priority parameter in Omi et al. is not transmitted according

to this data amount parameter.

Accordingly, Applicants respectfully submit that, since neither van der Tuijn et al. nor

Omi et al. teaches or suggests the features described in claim 8, it would not have been obvious

for a person of ordinary skill in the art to reach the invention described in claim 8 even by

combining van der Tuijn et al. and Omi et al.

Applicants also respectfully submit that claims 9 and 11-14 would be also patentable over

van der Tuijn et al. in view of Omi et al. at least because of their dependency from independent

claim 8.

Currently presented claim 15 recites:

A communication method in a wireless communication system having at least one slave device and a master device linked with the at least one slave device, comprising the steps of:

(a) <u>receiving a requested priority</u> from the at least one slave device;

(b) determining and assigning the at least one slave device with a priority <u>considering the requested priority</u>; and

(c) communicating with the at least one slave device according to the priority,

wherein the step (c) <u>subtracts one time from the frequency of communication</u> after each communication with the at least one slave device.

As discussed above, both van der Tuijn et al. and Omi et al. fail to teach or suggest "<u>receiving a requested priority</u> from the at least one slave device," and "determining and assigning the at least one slave device with a priority <u>considering the requested priority</u>," as recited in claim 15.

Furthermore, as the Examiner admits in the Office Action, van der Tuijn et al. does not teach "<u>subtracting one time from the frequency of communication</u> after each communication with the at least one slave device" (page 12 of the Office Action). In this connection, the Examiner relies on Omi et al. for teaching this technical feature, but Omi et al. also does not teach "<u>subtracting one time from the frequency of communication</u> after each communication with the at least one slave device," as recited in claim 15.

More specifically, although Omi et al. teaches that the scheduler calculates a difference Vdd between a data amount parameter and a received data amount, and calculates a priority value by subtracting an overhead bandwidth from an entire transmission bandwidth of the system

(col. 4, lines 3-24), there is still no teaching in Omi et al. of "subtracting one time from the frequency of communication after each communication with the at least one slave device," as recited in claim 15.

According to an exemplary embodiment consistent with the claimed invention of claim 15, on time is subtracted from the frequency of communication after each communication with the slave device, while in Omi et al., an overhead bandwidth is subtracted from the entire communication bandwidth so that a transmission bandwidth is efficiently acquired (col. 4, lines 8-14).

Accordingly, Applicants respectfully submit that, since neither van der Tuijn et al. nor Omi et al. teaches or suggests the features described in claim 15, it would not have been obvious for a person of ordinary skill in the art to reach the invention described in claim 15 even by combining van der Tuijn et al. and Omi et al.

Applicants also respectfully submit that claim 16 would be also patentable over van der Tuijn et al. in view of Omi et al. at least because of its dependency from independent claim 15.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

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Respectfully submitted,

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